

What is claimed is:

1 1. A method for handling mobile database overflow,
2 registering an un-registered mobile user located in a
3 location area, comprising the steps of:
4 obtaining a registration request from a first mobile
5 user;
6 determining whether the database of a visitor
7 location register (VLR) is full;
8 registering the first mobile user to a home location
9 register (HLR) if the database of the VLR is
10 not full;
11 temporarily storing user data of the first mobile
12 user in the VLR;
13 translating the location information of a second
14 mobile user registered in the VLR into a second
15 location code if the database of the VLR is
16 full;
17 transferring the registration request and the second
18 location code to the HLR;
19 resetting the value of a first location code of the
20 first mobile user as a predetermined value; and
21 deleting user data of the second mobile user and
22 temporarily storing the user data of the first
23 mobile user in the VLR.

1 2. The method as claimed in claim 1, wherein the
2 VLR comprises a location information table.

1 3. The method as claimed in claim 2, wherein the
2 location information table comprises a location code

3 field, a location area identifier (LAI) field, and a
4 Mobile Switch Center (MSC) address field.

1 4. The method as claimed in claim 1, wherein the
2 registering step translates the location information of
3 the second location code into a second location code.

1 5. The method as claimed in claim 1, wherein an
2 extra field is added to the HLR for storing location
3 codes.

1 6. A system for handling mobile database overflow,
2 registering an un-registered mobile user located in a
3 location area comprising a first mobile user sending a
4 registration request and a second mobile user, at least
5 comprising:

6 a VLR, storing user data of the second mobile user
7 and receiving the registration request of the
8 first mobile user; and

9 an HLR, processing the registration request of the
10 first mobile user, wherein the VLR determines
11 whether its database thereof is full, the first
12 mobile user is registered to the HLR if the
13 database is not full, user data of the first
14 mobile user is temporarily stored in the VLR,
15 location information of the second mobile user
16 is translated into a second location code if
17 the database is full, the registration request
18 and second location code are transferred to the
19 HLR, the value of a first location code of the
20 first mobile user is reset as a predetermined

21 value, the user data of the second mobile user
22 is deleted, and the user data of the first
23 mobile user is temporarily stored in the VLR.

1 7. The system as claimed in claim 6, wherein the
2 VLR comprises a location information table.

1 8. The system as claimed in claim 7, wherein the
2 location information table comprises a location code
3 field, an LAI field, and an MSC address field.

1 9. The system as claimed in claim 6, wherein the
2 second location code of the second mobile user is stored
3 in the HLR when the first mobile user is registered to
4 the HLR.

1 10. The system as claimed in claim 6, wherein an
2 extra field is added to the HLR for storing location
3 codes.

1 11. A method for handling mobile database overflow,
2 by searching for an overflow user, comprising the steps
3 of:

4 Searching for the mobile user when receiving a call
5 request to a mobile user;
6 determining whether the value of the location code
7 of the mobile user is a predetermined value;
8 setting up the call between the caller and the
9 mobile user if the value of the location code
10 is the predetermined value;
11 obtaining the location information of the mobile
12 user in accordance with the location code and a

13 location information table if the value of the
14 location code is not the predetermined value;
15 and
16 re-registering the mobile user for communication.

1 12. The method as claimed in claim 11, wherein the
2 step of obtaining the location information of the mobile
3 user further comprises the steps of:
4 a VLR obtaining the location code corresponding to
5 the mobile user from an HLR;
6 the VLR looking up the location information table
7 using the location code of the mobile user to
8 obtain an MSC address and an LAI of a location
9 area;
10 the VLR informing the MSC of the location area where
11 the mobile user resides;
12 the MSC notifying the BSC of the location area to
13 search for the location of the mobile user;
14 the BSC obtaining the location of the mobile user by
15 broadcasting to the location area;
16 the MSC obtaining the location of the mobile user
17 from the BSC;
18 the VLR obtaining the location of the mobile user
19 from the MSC; and
20 the VLR notifying the HLR of the location of the
21 mobile user and re-registering the user
22 information in its database.

1 13. The method as claimed in claim 12, wherein the
2 location information table comprises a location code
3 field, an LAI field, and an MSC address field.

1 14. The method as claimed in claim 12, wherein an
2 extra field is added to the HLR for storing location
3 codes.

1 15. A system for handling mobile database overflow
2 to find the location of an overflow user to deliver a
3 call, comprising a mobile user, at least comprising:

4 a VLR, comprising a location information table; and
5 an HLR wherein the HLR determines whether the value
6 of the location code of the mobile user is the
7 predetermined value when receiving a call
8 request to the mobile user, the system sets up
9 the call between the caller and the mobile user
10 if the value of the location code is the
11 predetermined value, the location information
12 of the mobile user is obtained in accordance
13 with the location code and a location
14 information table if the value of the location
15 code is not the predetermined value, and the
16 mobile user is re-registered.

1 16. The system as claimed in claim 15, further
2 comprising a process for obtaining the location
3 information, wherein the HLR sends the location code of
4 the mobile user to the VLR, the VLR looks up the location
5 information table using the location code of the mobile
6 user to obtain an MSC address and an LAI of a location
7 area for the mobile user, the VLR informs the MSC of the
8 location area where the mobile user resides, the MSC
9 notifies the BSC of the location area to search for the

10 location of the mobile user, the BSC obtains the location
11 of the mobile user by broadcasting to the location area,
12 the MSC obtains the location of the mobile user from the
13 BSC, the VLR obtains the location of the mobile user from
14 the MSC, the VLR notifies the HLR of the location of the
15 mobile user and re-registers the user information in its
16 database.

1 17. The system as claimed in claim 16, wherein the
2 location information table comprises a location code
3 field, an LAI field, and an MSC address field.

1 18. The system as claimed in claim 16, wherein an
2 extra field is added to the HLR for storing the location
3 codes.